

# Nano-enabled improvements of growth and nutritional rhizosphere processes

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Citation Report

#	ARTICLE	IF	CITATIONS
1	CeO <sub>2</sub> Nanoparticles Regulate the Propagation of Antibiotic Resistance Genes by Altering Cellular Contact and Plasmid Transfer. <i>Environmental Science &amp; Technology</i> , 2020, 54, 10012-10021.	10.0	73
2	Response of soil microbial communities to engineered nanomaterials in presence of maize ( <i>Zea mays</i> L.) plants. <i>Environmental Pollution</i> , 2020, 267, 115608.	7.5	36
3	Nano farming. <i>Materials Today: Proceedings</i> , 2021, 45, 3805-3808.	1.8	1
4	New insight into the mechanism of graphene oxide-enhanced phytotoxicity of arsenic species. <i>Journal of Hazardous Materials</i> , 2021, 410, 124959.	12.4	18
5	Dissolution and Aggregation of Metal Oxide Nanoparticles in Root Exudates and Soil Leachate: Implications for Nanoagrochemical Application. <i>Environmental Science &amp; Technology</i> , 2021, 55, 13443-13451.	10.0	45
6	Root Morphology and Rhizosphere Characteristics Are Related to Salt Tolerance of <i>Suaeda salsa</i> and <i>Beta vulgaris</i> L.. <i>Frontiers in Plant Science</i> , 2021, 12, 677767.	3.6	11
7	Nitrogen-Doped Carbon Dots Increased Light Conversion and Electron Supply to Improve the Corn Photosystem and Yield. <i>Environmental Science &amp; Technology</i> , 2021, 55, 12317-12325.	10.0	67
8	Copper Oxide Nanoparticle-Embedded Hydrogels Enhance Nutrient Supply and Growth of Lettuce ( <i>Lactuca sativa</i> ) Infected with <i>Fusarium oxysporum</i> f. sp. <i>lactucae</i> . <i>Environmental Science &amp; Technology</i> , 2021, 55, 13432-13442.	10.0	46
9	Effect of Foliar Fertigation of Chitosan Nanoparticles on Cadmium Accumulation and Toxicity in <i>Solanum lycopersicum</i> . <i>Biology</i> , 2021, 10, 666.	2.8	38
10	The Phragmites Root-Inhabiting Microbiome: A Critical Review on Its Composition and Environmental Application. <i>Engineering</i> , 2022, 9, 42-50.	6.7	14
11	Combined effect of nano-CuO and nano-ZnO in plant-related system: From bioavailability in soil to transcriptional regulation of metal homeostasis in barley. <i>Journal of Hazardous Materials</i> , 2021, 416, 126230.	12.4	22
12	Priming with Nanoscale Materials for Boosting Abiotic Stress Tolerance in Crop Plants. <i>Journal of Agricultural and Food Chemistry</i> , 2021, 69, 10017-10035.	5.2	29
13	Metallic oxide nanomaterials act as antioxidant nanozymes in higher plants: Trends, meta-analysis, and prospect. <i>Science of the Total Environment</i> , 2021, 780, 146578.	8.0	38
14	Cell Walls Are Remodeled to Alleviate nY <sub>2</sub> O <sub>3</sub> Cytotoxicity by Elaborate Regulation of <i>de Novo</i> Synthesis and Vesicular Transport. <i>ACS Nano</i> , 2021, 15, 13166-13177.	14.6	13
15	Nanoscale Sulfur Improves Plant Growth and Reduces Arsenic Toxicity and Accumulation in Rice ( <i>Oryza sativa</i> L.). <i>Environmental Science &amp; Technology</i> , 2021, 55, 13490-13503.	10.0	48
16	Sulfur nanoparticles improved plant growth and reduced mercury toxicity via mitigating the oxidative stress in <i>Brassica napus</i> L.. <i>Journal of Cleaner Production</i> , 2021, 318, 128589.	9.3	47
17	Copper nanoclusters promote tomato ( <i>Solanum lycopersicum</i> L.) yield and quality through improving photosynthesis and roots growth. <i>Environmental Pollution</i> , 2021, 289, 117912.	7.5	19
18	Interaction of different-sized ZnO nanoparticles with maize ( <i>Zea mays</i> ): Accumulation, biotransformation and phytotoxicity. <i>Science of the Total Environment</i> , 2021, 796, 148927.	8.0	24

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19	Investigation of Morphology and Composition of the Mineral Fertilizer Granules with Nanostructured Areas. , 2020, , .		4
20	Application of Nanoparticles Alleviates Heavy Metals Stress and Promotes Plant Growth: An Overview. <i>Nanomaterials</i> , 2021, 11, 26.	4.1	122
21	A comprehensive review of impacts of diverse nanoparticles on growth, development and physiological adjustments in plants under changing environment. <i>Chemosphere</i> , 2022, 291, 132672.	8.2	36
22	Foliar Application of Nano, Chelated, and Conventional Iron Forms Enhanced Growth, Nutritional Status, Fruiting Aspects, and Fruit Quality of Washington Navel Orange Trees ( <i>Citrus sinensis</i> L.) <i>Tj ETQq1 1 0.784314 rgBT /Overlock</i>	11.4	0
23	Potential toxicity of nanoplastics to fish and aquatic invertebrates: Current understanding, mechanistic interpretation, and meta-analysis. <i>Journal of Hazardous Materials</i> , 2022, 427, 127870.	12.4	28
24	Nanobiochar-rhizosphere interactions: Implications for the remediation of heavy-metal contaminated soils. <i>Environmental Pollution</i> , 2022, 299, 118810.	7.5	38
25	Nano-enabled improvements of growth and colonization rate in wheat inoculated with arbuscular mycorrhizal fungi. <i>Environmental Pollution</i> , 2022, 295, 118724.	7.5	22
26	Fluorescent g-C <sub>3</sub> N <sub>4</sub> nanosheets enhanced photosynthetic efficiency in maize. <i>NanoImpact</i> , 2021, 24, 100363.	4.5	7
27	Foliar Application with Iron Oxide Nanomaterials Stimulate Nitrogen Fixation, Yield, and Nutritional Quality of Soybean. <i>ACS Nano</i> , 2022, 16, 1170-1181.	14.6	56
28	Engineered Nanomaterial Exposure Affects Organelle Genetic Material Replication in <i>Arabidopsis thaliana</i> . <i>ACS Nano</i> , 2022, 16, 2249-2260.	14.6	18
29	Copper stress alleviation in corn ( <i>Zea mays</i> L.): Comparative efficiency of carbon nanotubes and carbon nanoparticles. <i>NanoImpact</i> , 2022, 25, 100381.	4.5	13
30	Multiomics understanding of improved quality in cherry radish ( <i>Raphanus sativus</i> L. var. <i>radculus</i> ) <i>Tj ETQq1 1 0.784314 rgBT /Overlock</i> 153712.	8.0	27
31	Nanomaterial-induced modulation of hormonal pathways enhances plant cell growth. <i>Environmental Science: Nano</i> , 2022, 9, 1578-1590.	4.3	8
32	Nanotechnology: a novel and sustainable approach towards heavy metal stress alleviation in plants. <i>Nanotechnology for Environmental Engineering</i> , 2023, 8, 27-40.	3.3	13
33	Iron Oxide and Silicon Nanoparticles Modulate Mineral Nutrient Homeostasis and Metabolism in Cadmium-Stressed <i>Phaseolus vulgaris</i> . <i>Frontiers in Plant Science</i> , 2022, 13, 806781.	3.6	28
34	Nano-enabled pesticides for sustainable agriculture and global food security. <i>Nature Nanotechnology</i> , 2022, 17, 347-360.	31.5	219
35	Iron-Carbon Nanofibers Coated with Acylated Homoserine Lactone Enhance Plant Growth and Suppress Fusarium Wilt Disease in <i>Cicer arietinum</i> by Modulating Soil Microbiome. <i>ACS Agricultural Science and Technology</i> , 2022, 2, 311-322.	2.3	7
36	Abandoned agriculture soil can be recultivated by promoting biological phosphorus fertility when amended with nano-rock phosphate and suitable bacterial inoculant. <i>Ecotoxicology and Environmental Safety</i> , 2022, 234, 113385.	6.0	13

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37	Coffee cultivation techniques, impact of climate change on coffee production, role of nanoparticles and molecular markers in coffee crop improvement, and challenges. <i>Journal of Plant Biotechnology</i> , 2021, 48, 207-222.	0.4	4
38	Phytonanotechnology applications in modern agriculture. <i>Journal of Nanobiotechnology</i> , 2021, 19, 430.	9.1	57
39	Triiron Tetrairon Phosphate (Fe <sub>7</sub> (PO <sub>4</sub> ) <sub>6</sub> ) Nanomaterials Enhanced Flavonoid Accumulation in Tomato Fruits. <i>Nanomaterials</i> , 2022, 12, 1341.	4.1	5
40	The potential of nanomaterials for sustainable modern agriculture: present findings and future perspectives. <i>Environmental Science: Nano</i> , 2022, 9, 1926-1951.	4.3	13
43	Nanofertilizer Possibilities for Healthy Soil, Water, and Food in Future: An Overview. <i>Frontiers in Plant Science</i> , 2022, 13, .	3.6	35
44	Carbon nanoparticles improve corn ( <i>Zea mays</i> L.) growth and soil quality: Comparison of foliar spray and soil drench application. <i>Journal of Cleaner Production</i> , 2022, 363, 132630.	9.3	18
45	Nano-fertilizers: A sustainable technology for improving crop nutrition and food security. <i>NanoImpact</i> , 2022, 27, 100411.	4.5	75
46	Overview on Recent Developments in the Design, Application, and Impacts of Nanofertilizers in Agriculture. <i>Sustainability</i> , 2022, 14, 9397.	3.2	17
47	Carbon Dots Improve Nitrogen Bioavailability to Promote the Growth and Nutritional Quality of Soybeans under Drought Stress. <i>ACS Nano</i> , 2022, 16, 12415-12424.	14.6	32
48	Nanoscale Iron trioxide catalyzes the synthesis of auxins analogs in artificial humic acids to enhance rice growth. <i>Science of the Total Environment</i> , 2022, 848, 157536.	8.0	10
49	The role of carbon dots in the life cycle of crops. <i>Industrial Crops and Products</i> , 2022, 187, 115427.	5.2	8
50	Foliar spray of combined metal-oxide nanoparticles alters the accumulation, translocation and health risk of Cd in wheat ( <i>Triticum aestivum</i> L.). <i>Journal of Hazardous Materials</i> , 2022, 440, 129857.	12.4	17
51	Prediction models on biomass and yield of rice affected by metal (oxide) nanoparticles using nano-specific descriptors. <i>NanoImpact</i> , 2022, 28, 100429.	4.5	3
52	Nanoemulsion formulations with plant growth promoting rhizobacteria (PGPR) for sustainable agriculture. , 2022, , 207-223.		4
53	Selenium and Nano-Selenium as a New Frontier of Plant Biostimulant. , 2022, , 41-54.		0
54	Uptake and bioaccumulation of nanoparticles by five higher plants using single-particle-inductively coupled plasma-mass spectrometry. <i>Environmental Science: Nano</i> , 2022, 9, 3066-3080.	4.3	4
55	Application of nano-agricultural technology for biotic stress management: mechanisms, optimization, and future perspectives. <i>Environmental Science: Nano</i> , 2022, 9, 4336-4353.	4.3	5
56	Nanomaterial transformation in root-soil interface: a function of root exudate or microbial activity?. , 2022, , 209-237.		0

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57	Pharmaceutical and biomedical applications of starch-based drug delivery system: A review. <i>Journal of Drug Delivery Science and Technology</i> , 2022, 77, 103890.	3.0	12
58	Biointeractions of plantsâ€™microbesâ€™engineered nanomaterials. , 2023, , 201-231.		0
59	Earthworms Drive the Effect of La <sub>2</sub> O <sub>3</sub> Nanoparticles on Radish Taproot Metabolite Profiles and Rhizosphere Microbial Communities. <i>Environmental Science &amp; Technology</i> , 2022, 56, 17385-17395.	10.0	9
60	Surface Coated Sulfur Nanoparticles Suppress <i>Fusarium</i> Disease in Field Grown Tomato: Increased Yield and Nutrient Biofortification. <i>Journal of Agricultural and Food Chemistry</i> , 2022, 70, 14377-14385.	5.2	9
61	Cotton-maize intercropping increases rhizosphere soil phosphorus bioavailability by regulating key phosphorus cycling genes in northwest China. <i>Applied Soil Ecology</i> , 2023, 182, 104734.	4.3	5
62	Unlocking the biotechnological and environmental perspectives of microplastic degradation in soil-ecosystems using metagenomics. <i>Chemical Engineering Research and Design</i> , 2023, 170, 372-379.	5.6	6
63	Microbial bioprocess performance in nanoparticle-mediated composting. <i>Critical Reviews in Biotechnology</i> , 2023, 43, 1193-1210.	9.0	2
64	Nanoplasticâ€™plant interaction and implications for soil health. <i>Soil Use and Management</i> , 2023, 39, 13-42.	4.9	10
65	Interaction of Nanoparticles with Plant Macromolecules: Carbohydrates and Lipids. , 2023, , 213-230.		0
66	Role of Nanomaterials in Improving the Nutritional Value of Crops. , 2023, , 399-422.		1
67	Environment sustainability with microbial nanotechnology. , 2023, , 289-314.		1
68	Impact of nanopesticide CuO-NPs and nanofertilizer CeO <sub>2</sub> -NPs on wheat <i>Triticum aestivum</i> under global warming scenarios. <i>Chemosphere</i> , 2023, 328, 138576.	8.2	3
69	Chitosan oligosaccharide as a plant immune inducer on the <i>Passiflora</i> spp. (passion fruit) CMV disease. <i>Frontiers in Plant Science</i> , 0, 14, .	3.6	1
70	Nanopesticides in agricultural pest management and their environmental risks: a review. <i>International Journal of Environmental Science and Technology</i> , 2023, 20, 10507-10532.	3.5	19
71	Silicon nanoparticles: Synthesis, uptake and their role in mitigation of biotic stress. <i>Ecotoxicology and Environmental Safety</i> , 2023, 255, 114783.	6.0	12
72	Unraveling the role of nanoparticles and rhizosphere microbiome for crop production under stress condition. , 2023, , 161-181.		1
73	Trophic transfer of silver nanoparticles shifts metabolism in snails and reduces food safety. <i>Environment International</i> , 2023, 176, 107990.	10.0	2
74	Emerging Frontiers in Nanotechnology for Precision Agriculture: Advancements, Hurdles and Prospects. , 2023, 2, 220-256.		15

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75	Phytotoxicity Responses and Defence Mechanisms of Heavy Metal and Metal-Based Nanoparticles. , 2023, , 59-96.		0
76	Comparative study of the effectiveness of nano-sized iron-containing particles as a foliar top-dressing of peanut in rainy conditions. <i>Agricultural Water Management</i> , 2023, 286, 108392.	5.6	3
77	±-Fe <sub>2</sub> O <sub>3</sub> nanomaterials strengthened the growth promoting effect of <i>Pseudomonas aurantiaca</i> strain JD37 on alfalfa <i>via</i> enhancing the nutrient interaction of the plant-rhizobacteria symbiont. <i>Environmental Science: Nano</i> , 0, , .	4.3	0
78	Nutrient strengthening of winter wheat by foliar ZnO and Fe <sub>3</sub> O <sub>4</sub> NPs: Food safety, quality, elemental distribution and effects on soil bacteria. <i>Science of the Total Environment</i> , 2023, 893, 164866.	8.0	4
79	Management of soil nutrient deficiency by nanometal oxides. , 2023, , 291-320.		0
80	Potential functions of engineered nanomaterials in cadmium remediation in soil-plant system: A review. <i>Environmental Pollution</i> , 2023, 336, 122340.	7.5	3
81	Nanomaterial transport and transformation in soil-plant systems: role of rhizosphere chemistry. , 2023, , 355-375.		1
82	Understanding the phytotoxic effects of CeO <sub>2</sub> nanoparticles on the growth and physiology of soybean ( <i>Glycine max</i> L. Merrill) in soil media. <i>Environmental Science: Nano</i> , 2023, 10, 2904-2912.	4.3	0
83	Effect of Nano-Formulated Agrochemicals on Rhizospheric Communities in Millets. <i>Rhizosphere Biology</i> , 2023, , 293-330.	0.6	0
85	Silicon nanoparticles (SiNPs): Challenges and perspectives for sustainable agriculture. <i>Physiological and Molecular Plant Pathology</i> , 2023, 128, 102161.	2.5	3
86	<i>Piriformospora indica</i> (Serendipita indica): potential tool for alleviation of heavy metal toxicity in plants. , 2023, , 401-422.		0
87	The application of nanoparticles on the yield and nutritional quality of rice under different irrigation regimes. <i>Water Science and Technology: Water Supply</i> , 2023, 23, 3345-3358.	2.1	0
88	Co-application of arbuscular mycorrhizal fungi and engineered nanomaterials: A promising strategy for crop resilience against abiotic stresses. <i>South African Journal of Botany</i> , 2023, 162, 314-323.	2.5	0
89	Cerium oxide as a nanozyme for plant abiotic stress tolerance: An overview of the mechanisms. , 2023, 6, 100049.		0
90	New insights into the environmental application of hybrid nanoparticles in metal contaminated agroecosystem: A review. <i>Journal of Environmental Management</i> , 2024, 349, 119553.	7.8	0
91	Effect of CeO <sub>2</sub> Nanoparticles on the Spread of Antibiotic Resistance in a Reclaimed Water-Soil-Radish System – Shenzhen City, Guangdong Province, China, April 2023. , 2023, 5, 1029-1037.		0
92	Green Synthesis of Nanofertilizers and Their Application for Crop Production. <i>Nanotechnology in the Life Sciences</i> , 2024, , 205-231.	0.6	0
93	Investigating the ecological implications of nanomaterials: Unveiling plants' notable responses to nano-pollution. <i>Plant Physiology and Biochemistry</i> , 2024, 206, 108261.	5.8	1

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94	Nano-Iron Oxide (Fe <sub>3</sub> O <sub>4</sub> ) Mitigates the Effects of Microplastics on a Ryegrass Soil-Microbe-Plant System. ACS Nano, 0, , .	14.6	1
95	Effects of nanoparticle application on <i>Cyclocarya paliurus</i> growth: Mechanisms underlying the particle- and dose-dependent response. Industrial Crops and Products, 2024, 209, 117942.	5.2	0
96	Nanoremediation approaches for the mitigation of heavy metal contamination in vegetables: An overview. Nanotechnology Reviews, 2023, 12, .	5.8	0
97	A systematic review of antibiotic resistance driven by metal-based nanoparticles: Mechanisms and a call for risk mitigation. Science of the Total Environment, 2024, 916, 170080.	8.0	0
98	Unleashing the Feasibility of Nanotechnology in Phytoremediation of Heavy Metal-Contaminated Soil: A Critical Review Towards Sustainable Approach. Water, Air, and Soil Pollution, 2024, 235, .	2.4	1
99	Technological intervention in rhizosphere of tomato plants: a case study. , 2024, , 91-121.		0
100	Phytotoxicological effects of phytosynthesized nanoparticles: A systematic review and meta-analysis. Critical Reviews in Environmental Science and Technology, 0, , 1-21.	12.8	0
101	Silica-based nanofertilizer for soil treatment, and improved crop productivity. , 2024, , 271-279.		0
102	Potential of nano-phytoremediation of heavy metal contaminated soil: emphasizing the role of mycorrhizal fungi in the amelioration process. International Journal of Environmental Science and Technology, 2024, 21, 6405-6428.	3.5	0
104	Nanoparticle applications in agriculture: overview and response of plant-associated microorganisms. Frontiers in Microbiology, 0, 15, .	3.5	0
105	Role of nanomaterials for alleviating heavy metal(oid) toxicity in plants. , 2024, , 289-306.		0
106	Seed priming with engineered nanomaterials for mitigating abiotic stress in plants. , 2024, , 229-247.		0